Figure 1

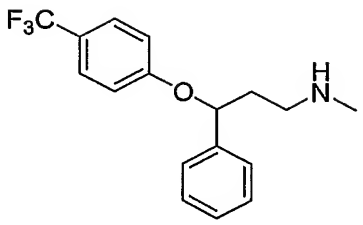


Figure 2

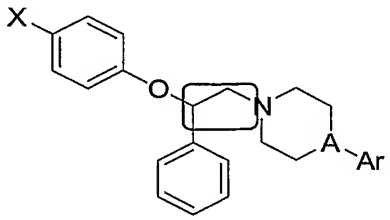
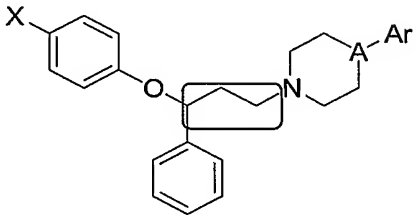
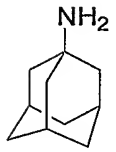
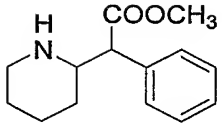
Homologues Type I	Homologues Type II
	
Aminoethane Derivatives X = F or CF_3 A = N or C (piperazine or piperidine) Ar = variety of aryl groups	**Aminopropane Derivatives** X = F or CF_3 A = N or C (piperazine or piperidine) Ar = variety of aryl groups

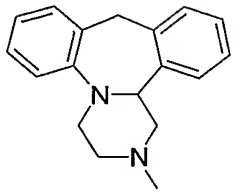
Figure 3



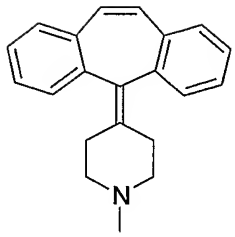
amantadine



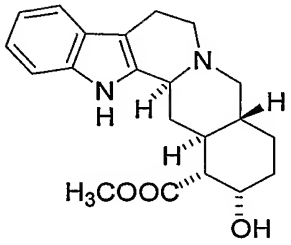
methylphenidate



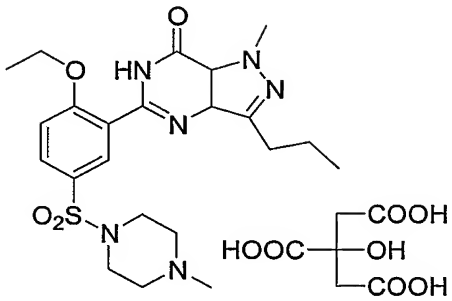
mianserin



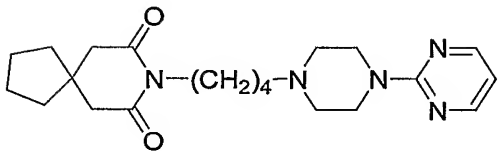
cyproheptadine



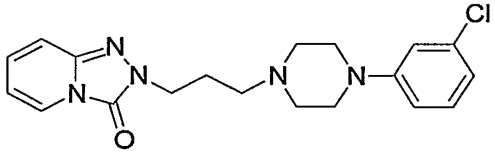
yohimbine



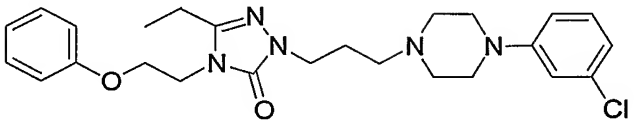
sildenafil citrate



buspirone

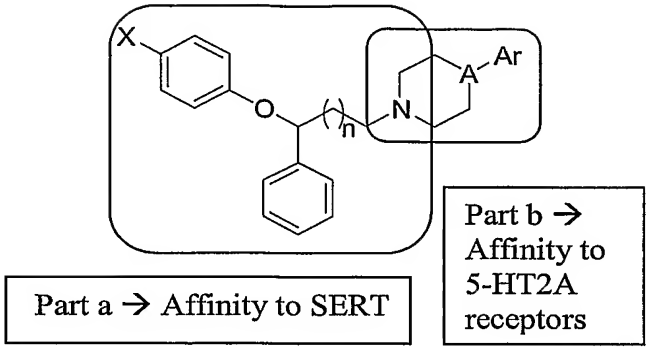


trazodone



nefazodone

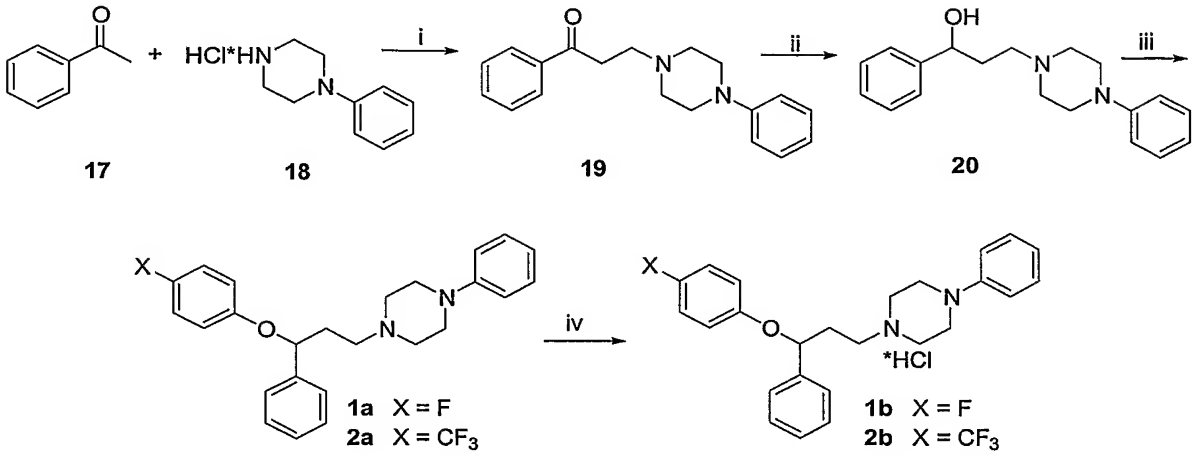
Figure 4



X = F or CF_3
n = 0 or 1 (ethyl or propyl chain)
A = N or C (piperazine or piperidine)
Ar = variety of aryl derivatives

Figure 5

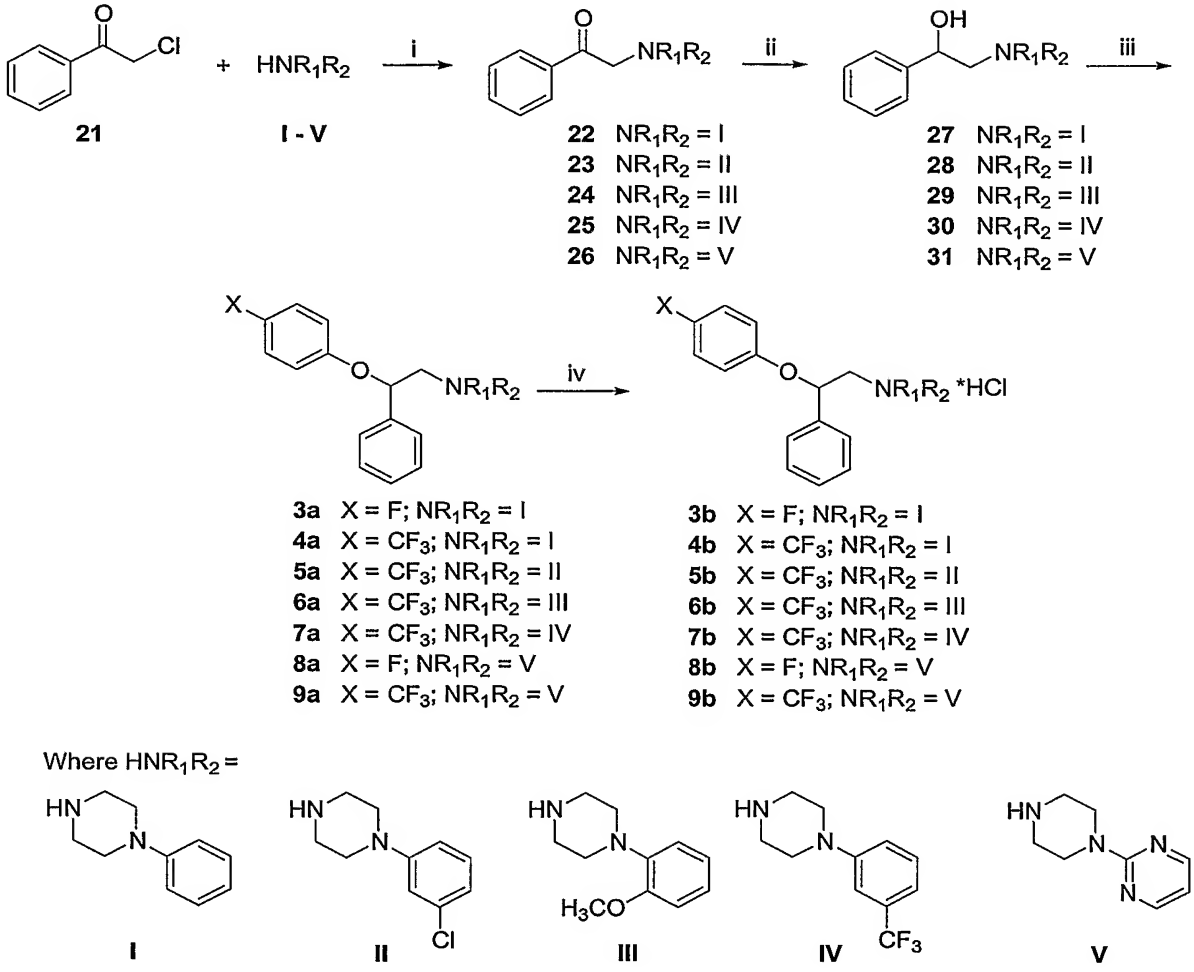
Scheme 1. Synthesis of Homologues Type II – Compounds 1 and 2.



Reagents and conditions: (i) Paraformaldehyde, cat. HCl, reflux 6h, 62%; (ii) $NaBH_4$ at 0°C, 8h at rt, 44-66%; (iv) THF, 4-fluorophenol or 4-trifluoromethylphenol, PPh_3, DIAD dropwise at 0°C, 48h at rt, 54-72%; (v) 2M HCl in anhydrous ether, 41-46%.

Figure 6

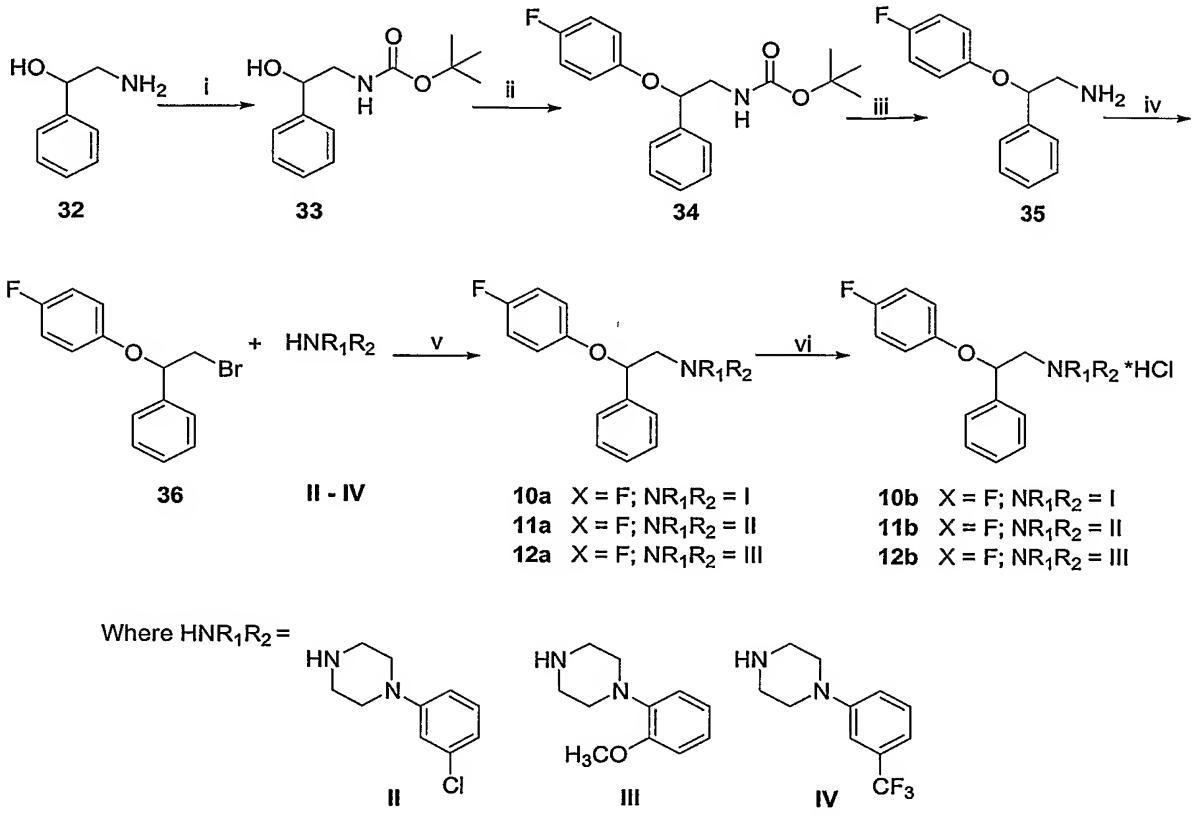
Scheme 2. Synthesis of Homologues Type I – Compounds 3 to 9.



Reagents and conditions: (i) K_2CO_3, Acetonitrile, reflux 16h, 53-59%; (ii) $NaBH_4$ at 0°C, 8h at rt, 91-95%; (iii) THF, 4-fluorophenol or 4-trifluoromethylphenol, PPh_3, DIAD dropwise at 0°C, 48h at rt, 40%; (iv) 2 M HCl in anhydrous ether, 75-81%.

Figure 7

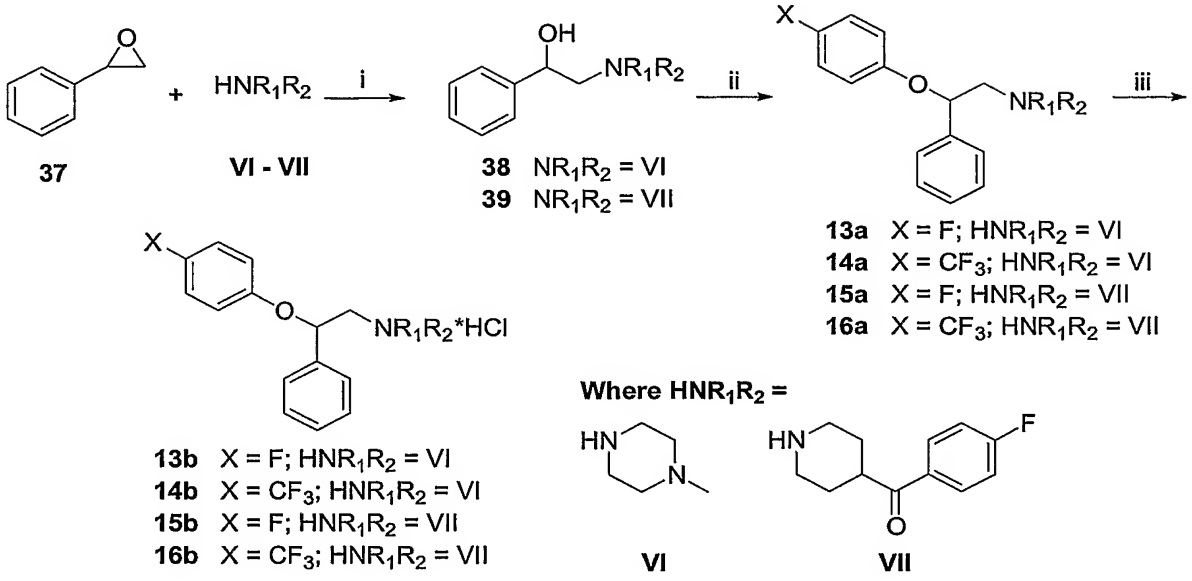
Scheme 3. Synthesis of Homologues Type I – Compounds 10 to 12.



Reagents and Conditions: i) t-boc anhydride, DMF, 15 min at 50°C, 8h at rt, 78%; ii) DMF, 4-fluorophenol, PPh3, DEAD dropwise at 0°C, 8h at rt, 43%; iii) 4N HCl in Dioxane, 1.5h at rt, 64%; iv) DMF, TiBr4, t-butyl nitrite, 1 h at rt, 33%; v) K_2CO_3, DMF, reflux 16-18h, 18-39%; vi) 2M HCL in anhydrous ether, 9-68%.

Figure 8

Scheme 4. Synthesis of Homologues Type I – Compounds 13 to 16.



Reagents and conditions: (i) K_2CO_3, Dichloromethane, reflux 16h, 53-59%; (ii) THF, 4-fluorophenol or 4-trifluoromethylphenol, PPh_3, DIAD dropwise at 0°C, 48h at rt, 40%; (iii) 2 M HCl in anhydrous ether, 75-81%.

Figure 9

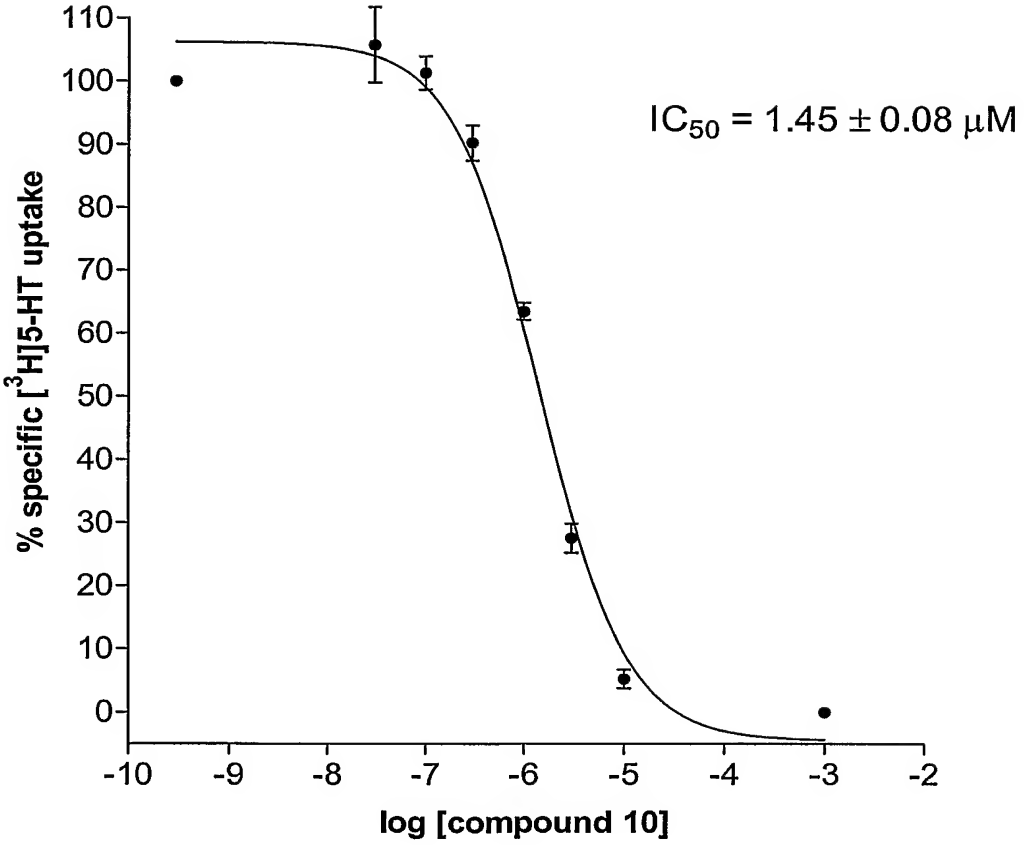

% specific [^{3}H]5-HT uptake
110
100
90
80
70
60
50
40
30
20
10
0
-10
-9
-8
-7
-6
-5
-4
-3
-2
log [compound 10]
IC_{50} = 1.45 ± 0.08 μM

Figure 10

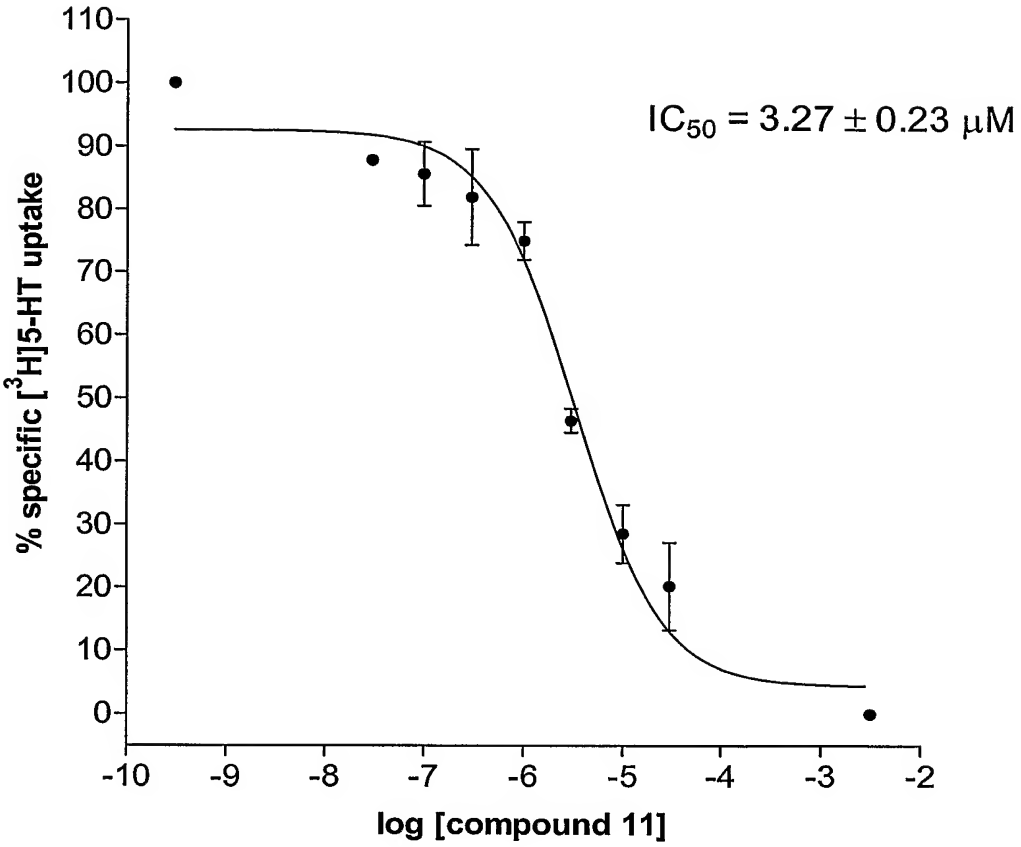
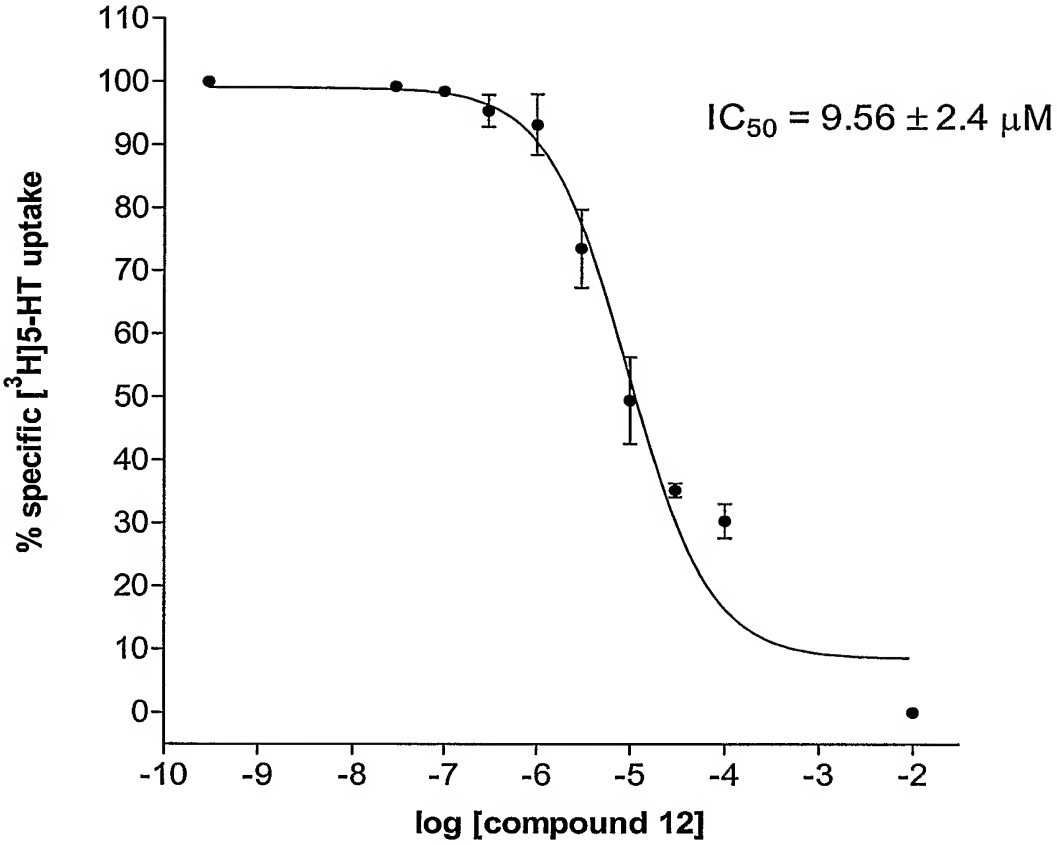

110
100
90
80
70
60
50
40
30
20
10
0
% specific [3H]5-HT uptake
IC50 = 3.27 ± 0.23 μM
-10
-9
-8
-7
-6
-5
-4
-3
-2
log [compound 11]

Figure 11


% specific [3H]5-HT uptake
110
100
90
80
70
60
50
40
30
20
10
0
-10
-9
-8
-7
-6
-5
-4
-3
-2
log [compound 12]
IC50 = 9.56 ± 2.4 μM